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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/891,885	06/26/2001	Mark T. Ramsbey	F0279	2423

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EXAMINER

MAGEE, THOMAS J

ART UNIT	PAPER NUMBER
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2811

DATE MAILED: 07/17/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/891,885

Applicant(s)

RAMSBEY ET AL.

Examiner

Thomas J. Magee

Art Unit

2811

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 1-8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 9-14 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Claims 9 – 14 in Letter No. 6 of June 26, 2002 is acknowledged.

Claim Rejections – 35 U.S.C. 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite in that it fails to point out what is included or excluded by the claim language. This claim is an omnibus type claim.

Claim Rejections – 35 U.S.C. 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 9, 10, 12, and 13 are rejected as being unpatentable under 35 U.S.C. 103(a) over Wu (US 6,008,081) in view of Reisinger (US 6,137,718).

5. Regarding Claims 9, 10, 12 and 13, Wu discloses (Col. 6, lines 39 – 67) a method

of forming a protection circuit for ESD on a memory device where the method includes forming an insulating layer (68) (See Figure 2A) followed by a polysilicon layer on a semiconductor substrate. Subsequently, gate structures are patterned and ESD protective transistors (66) and standard transistors (74,76) formed (See Figure 2B). Ion implants are done to form lightly doped source/drain regions. Spacers are formed at the edges of gates (82,84) (See Figure 2C) and used as a mask for heavily doping source and drain regions. Wu does not explicitly disclose the complexity of the integrated circuit, but does disclose that a number of other peripheral devices are present. In addition, Wu does not disclose the use of SONOS (silicon-oxide-nitride-semiconductor) memory cells, but this would be an easy modification. SONOS cells have been present since the late 1960's, although newer dielectric layers have been utilized in recent applications. Reisinger discloses (Col. 8, lines 5 – 12) the formation of MOS transistors with multilayer dielectrics (51,52,53) capped by a polysilicon layer (6) (See Figure 1) to produce a classical SONOS structure. Hence, it would have been obvious at the time of the invention to one of ordinary skill in the art to add Reisinger to Wu to obtain a memory circuit with SONOS cells.

6. Claim 14 is rejected as unpatentable under 35 U.S.C. 103(a) over Wu in view of Reisinger, as applied to Claims 9, 10, 12, and 13 above, and further in view of Syd R. Wilson et al. ("Handbook of Multilevel Metallization for Integrated Circuits", Noyes Publications, Westwood, New Jersey (1993) pp.860 – 873).

Wu discloses the formation of standard and ESD protection transistors in a circuit, but

does not disclose the use of SONOS cells. As discussed above, Reisinger discloses the formation of standard SONOS cells for MOS devices. Wu does not explicitly disclose the spacing of word line interconnects at 1um. However, Wilson et al. disclose a minimal signal delay for metal spacings and widths of approximately 1 um for a number of conductive materials. Further, the amount of crosstalk and normalized noise is significantly increased at spacings less than 1 um. Therefore, it would have been obvious to add Wilson et al. and Reisinger to Wu to obtain a working memory device containing SONOS cells with word lines spaced at 1 um.

Conclusions

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to **Thomas Magee**, whose telephone number is **(703) 305 5396**. The Examiner can normally be reached on Monday through Friday from 8:30AM to 5:00PM (EST). If attempts to reach the Examiner by telephone are unsuccessful, the examiner's supervisor, **Tom Thomas**, can be reached on **(703) 308-2772**. The fax number for the organization where this application or proceeding is assigned is **(703) 308-7722**.

Steven Lake
Primary Examiner

